

AQUATIC PLANT FIELD SHEET
MONTANA WATER QUALITY DIVISION

Waterbody_____ Site_____

Date_____ Investigator_____ Agency_____

Purpose: The purpose of completing this form is to estimate the percent of wetted substrates at the sampling site covered by each of the major categories of aquatic plants, to record the relative amount of accumulated growth in each category, and to note the general color and condition of plants in each category. This information will help to describe the health and productivity of the aquatic ecosystem, define nuisance aquatic plant problems, identify potential sources and causes of pollution, and document changes in the plant community over time.

Type of Plant Growth	Cover (%)	Amount of Growth	Color	Condition
Microalgae				
Macroalgae				
Mosses				
Macrophytes				
Bare Substrate		Substrates Present (rank) rock____; wood____, sediment____; other (list)_____		
Total	100%			

Explanation and Definitions

Cover: Estimate the percent of wetted substrate area colonized by each of the plant categories listed, and the percent area that is not colonized by any plants (see **Bare Substrate**, overleaf). Also, rank the types of substrates that are available for colonization by plants (1 = substrate accounting for the most area, etc.).

Amount: Record the relative amount of plant growth in each category as being **light**, **moderate**, or **heavy**. **Light** growth barely covers the substrate surface and is not immediately evident. **Heavy** growth extends almost to the water surface or beyond. **Moderate** growth is intermediate between light growth and heavy growth.
(over)

Color: The colors of aquatic plants are clues to their identity and to the health of aquatic ecosystems. Plant colors may span the spectrum of hues in the rainbow (see **Microalgae** below). Record the predominant color of the plants in each of the categories present.

Condition: Aquatic plants go through seasonal cycles of growth, maturity, and decay. The condition of a plant or group of plants will indicate the stage of this seasonal cycle. **Growing** plants show new growth and bright colors. **Mature** plants are larger but have more subdued colors because of age, epiphytes and sediment deposits. **Decaying** plants display a loss of both pigmentation and physical integrity. Enter **growing**, **mature**, or **decaying**.

Microalgae: Microalgae are microscopic algae appearing as pigmented accumulations attached to or resting upon submerged surfaces. This category commonly includes diatom "slimes" and films of green, blue-green, or euglenoid algae in depositional areas. Colors may range through shades of yellow, red, brown, green, blue and black. Included here are accumulations of "sewage fungus" (tan-gray) below sources of organic pollution, "yellow boy" (yellow-orange) below mine adits, and iron bacteria (orange-brown) in groundwater seeps and springs.

Macroalgae: Macroalgae are macroscopic algae whose individual plants or colonies are visible to the unaided eye. Macroalgae may be free-floating, or they may be attached to or resting upon submerged surfaces. Examples of macroalgae include filamentous growth forms (*Cladophora*, *Spirogyra*, *Ulothrix*), plant-like algae with leaf-like structures (*Chara*, *Nitella*), compact round or flattened colonies (*Nostoc*, *Rivularia*), gelatinous masses (*Chaetophora*, *Tetraspora*), and short, tubular strands (*Lemanea*). Color is highly variable, as it is with the microalgae.

Moss: Mosses are primitive plants that are intermediate in complexity between algae and higher plants. Mosses are common in cold-water habitats in western Montana. Mosses are typically green in color; the shade of green varies with plant vigor and the amount of sediment accumulation.

Macrophytes: Macrophytes or "higher plants" are distinguished from algae and mosses by their larger size and by the presence of true leaves, roots and flowers. Rooted macrophytes typically colonize areas of sediment deposition. Macrophytes may be free-floating (duckweed), submergent (pondweed), or emergent (cattails, bulrush, water lily).

Bare Substrate: Substrates may be void of plant growth because of toxic or sterile conditions or because of recently scoured or unstable substrates. Rocks in mountain lakes and streams may appear to be barren at first glance, but closer examination often reveals a very thin film of diatoms (microalgae) that feels slippery or slimy to the touch. Similarly, nearshore sediment deposits that have not been disturbed for several days will usually develop a film of microalgae. Examine these substrates closely.